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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,287	11/06/2001	Reinhard Janka	GK-ZEI-3140	5952

26418 7590 02/01/2008
REED SMITH, LLP
ATTN: PATENT RECORDS DEPARTMENT
599 LEXINGTON AVENUE, 29TH FLOOR
NEW YORK, NY 10022-7650

EXAMINER

GAKH, YELENA G

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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02/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/009,287	Applicant(s) JANKA ET AL.	
	Examiner Yelena G. Gakh, Ph.D.	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2007 and 26 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12, 15-19 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 21-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 and 15-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/26/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendment and Affidavit under 37 CFR 1.131 filed on 11/06/07 are acknowledged. Claims 12, 15-19 and 21-23 are pending in the application. Claims 19 and 21-23 are withdrawn from consideration. Claims 12 and 15-18 are considered on merits.

Response to Amendment

2. The Affidavit filed on 11/06/07 under 37 CFR 1.131 is sufficient to overcome the Carl Zeiss' reference.

New grounds of rejections over the prior art are established on the basis of the prior art submitted by the Applicants in accordance with 37 CFR 1.97(c).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 12 and 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites "a device unit for analyzing molecular interactions in small volumes". It is not clear, which specific "device" that is capable of "analyzing molecular interactions in small volumes" is meant in the claim? The examiner failed to find a specific description of such device in the specification. At the end the claim recites that analysis of molecular interactions is carried out by fluorescence correlation spectroscopy (FCS). However, this does not define, as to which specific device unit analyzes the molecular interactions. It is not apparent from the claim, which structural limitations for the device the explanation at the end of the claim provides. The claims are directed toward the apparatus and therefore are supposed to recite clearly and unambiguously structural elements of the apparatus. The lack of such clear recitation renders the claims unclear and indefinite.

Further, if the imaging microscope is based on the principle of laser scanning microscopy, it must be a laser scanning microscope (LSM); then it becomes unapparent, as to

which other scanner is recited in claim 16, and why the imaging microscope in claim 12 is not called "laser scanning microscope"?

It is also not clear, why the imaging microscope recited in claims 17 and 18 is again defined as LSM, if this is already recited in the parent claim?

The expression "an arrangement which is coupled into the illumination beam path of the LSM between scanner of the LSM and the specimen for excitation and detection by FCS via a shared evaluation unit" in claim 17 is unclear. What type of arrangement is recited in the claim? What is an "evaluation unit"?

From claim 18 it is not clear, which additional detectors are arranged following the scanner. What specifically these detectors detect? The language of the claims renders them unclear and indefinite

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 12 and 15-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koppel et al. (Biophys. J., 1994) (Koppel) in view of Qian et al., (Appl. Spect., 1991) (Qian).

Koppel discloses an arrangement for detecting fluorescent light comprising at least one imaging microscope unit for determining and selecting locations for analysis of molecular interactions (DNA molecules stained with ethidium bromide or gold-tagged lipids, page 503, left column) in at least two dimensions (scanning confocal laser microscope, LSM), a device unit for analyzing molecular interactions, which generates "an "image" file, in which the spatial component (x) is displayed on the horizontal axis and the temporal component (t) is displayed on the vertical axis (see Fig. 1A, C, and E and Fig. 2 B and E, for examples)" (page 503, left column, "Confocal microscopy").

Koppel does not specifically disclose selecting locations of the volume in two dimensions (one of the dimensions is time).

Qian discloses selecting locations in two dimensions, see page 1187, left column: "the distribution of emitted intensity from the sample will be $qI(\mathbf{r},z)c(\mathbf{r},z,t)$, where $c(\mathbf{r},z,t)$ is the time dependent concentration of the fluorophore in the sample and q is a constant which accounts for the wavelength dependent absorbance and emission coefficients of the fluorophore and optical system losses", with $\mathbf{r} = (x,y)$, i.e. measurements are made in two-dimensional plane.

It would have been obvious for a person skilled in the art to modify Koppel's arrangement for the detection of fluorescent light by selecting locations in at least two dimensions, as disclosed by Qian, since this increases precision of selecting locations and thus improves the accuracy of the system.

Response to Arguments

9. Applicant's arguments, filed 11/06/07, with respect to the rejection(s) of claim(s) 12 and 15-18 under 102(b) as being anticipated by Carl Zeiss' platform have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the prior art filed in IDS in

accordance with 37 CFR 1.97(c). Moreover, the language of the claims remains unclear and indefinite and requires considerable amendment. If the Applicants believe that it would be beneficial for the prosecution of the case to discuss the pending claims with the examiner, the examiner respectfully invites the applicants to schedule a telephone interview.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 11/26/07 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yelena G. Gakh/
Primary Examiner, AU 1797

1/5/2008